

April-24-14 10:00:22 AM

Page 1

MAY 14 2014

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 117164

April-24-14 10:00:22 AM

117164

Page 2

Item ID: D412-698-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hinge Panel Automatic Door Opener LH Aluminum Door

Start Date: 4/23/14 Start Qty: 2.00 ***2***

Cust Item ID:

Required Date: 4/23/14 Req'd Qty: 2.00 ***2***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130 Pick Kit

0.00

130

0.00

Packaging

Memo

Identify and pack for shipping as per PPP D412-698-041

Location: 031

PPP rev: _____

2 MAY 14 2014 DAS
06
9-89

140

QC21- Final Inspection - Work Order Release

0.00

140

0.00

QC

Memo

Quality Control

14/5/15 98
MLJ 14-05-15

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Handling/Pre									
Material									
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Offset/Setup									
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Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Picklist Print

April-24-14 10:00:28 AM

Page 1

Work Order ID: 117164

117164

Parent Item: D412-698-041

D412-698-041

Parent Item Name: Hinge Panel Automatic Door Opener LH Aluminum Door

Start Date: 4/23/14

Required Date: 4/23/14

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 11.08.18 new issue DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3552-21 2 *D3552-21* Door Prop		Manufactured	No			110	Each	10.0000	1	2		DAS 33 9-03	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST261			10					
					101430			8		101430			
					73948			2					
D3622-1 2 *D3622-1* Ball Stud		Manufactured	No			110	Each	60.0000	1	2		DAS 33 9-03	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST058			60					
					112742			20		112742			
					114881			40					
D4330-041 2 *D4330-041* Airframe Bracket Assembly, LH		Manufactured	No			110	Each	2.0000	1	2		DAS 33 9-03	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST103			2					
					101463			2		101463			
D4330-3 2 *D4330-3* Door Bracket		Manufactured	No			110	Each	11.0000	1	2		DAS 33 9-03	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST103			11					
					101442			5					
					101762			6		101762			

DQA: _____ Date: _____



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FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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Picklist Print

April-24-14 10:00:28 AM

Page 2

Work Order ID: 117164

117164

Parent Item: D412-698-041

D412-698-041

Parent Item Name: Hinge Panel Automatic Door Opener LH Aluminum Door

Start Date: 4/23/14

Required Date: 4/23/14

Start Qty: 2.00

Required Qty: 2.00

MS21042L5

Purchased

No

110

Each

1,454.000

1

2

MS21042L5

Nut

DAS
33
9-89

Location

Loc Qty

Loc Code

GA

1

117611

1

ST315

3

m127304

3

ST509

1450

m127813

500

m128810

950

128810

NAS1149D0563J

Purchased

No

110

Each

4,211.000

1

2

NAS1149D0563J

Washer

DAS
33
9-89

14-05-14

Location

Loc Qty

Loc Code

GA

201

m125807

201

ST510a

4010

m126319

2010

m128257

2000

126319

April-24-14 10:00:28 AM

Shop Packet Print

Page 2

DQA: _____ Date: _____



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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
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FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS
IIN-D412-698 REV. E OR LATER APPROVED REVISION

REF. TCCA STC: SH92-43
REF. FAA STC: SR01446NY
REF. EASA STC: EASA.IM.R.S.00709
REF. BRASIL STC: 2010S10-09

1.0 PURPOSE:

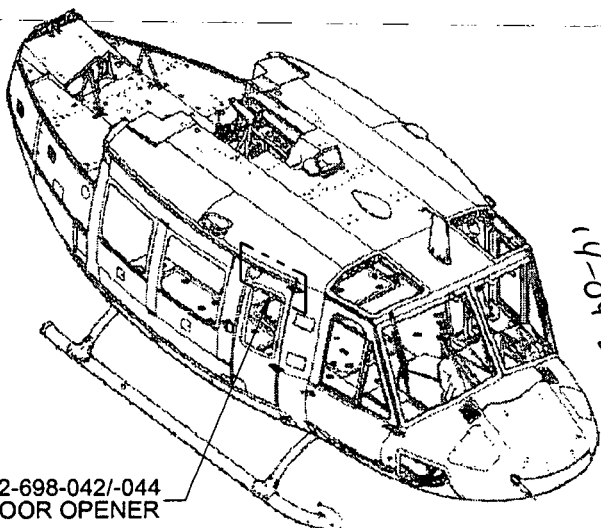
The purpose of this DSI is to add the optional automatic door opener kit for both the OEM aluminum (Bell P/N 205-031-423-005/-157/-006/-158), OEM composite (Bell P/N 412-030-029-101/-102), and Dart Spacedoor™ (Dart P/N D412-694-03/-04) hinge panel doors.

2.0 DESCRIPTION:

The Dart D412-698-XXX Hinge Panel Automatic Door Opener Kit permits the installation of a gas spring between the hinge panel doors (or "quarter" doors) and the cabin ceiling to prevent the doors from closing while the occupants enter or exit the aircraft.

The **D412-698-041 Hinge Panel Automatic Door Opener Kit** installs on the LH side of the aircraft and the **D412-698-042 Hinge Panel Automatic Door Opener Kit** installs on the RH side of the aircraft. These kits are designed to mount onto the OEM aluminum door (Bell P/N 205-031-423-005/-157/-006/-158).

The **D412-698-043 Hinge Panel Automatic Door Opener Kit** installs on the LH side of the aircraft and the **D412-698-044 Hinge Panel Automatic Door Opener Kit** installs on the RH side of the aircraft. These kits are designed to mount onto the OEM composite (Bell P/N 412-030-029-101/-102) and Dart Spacedoor™ (Dart P/N D412-694-03/-04).



LOCATION OF D412-698-042/-044
AUTOMATIC DOOR OPENER

FIGURE 1: LOCATION OF HINGE PANEL AUTOMATIC DOOR OPENER KITS
(RH Installation Shown, LH Opposite)

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 12.08.30
CERT. NO.: SH92-43
ISSUE NO.: 5

C	D412-698-043/-044 NOW COMPATIBLE FOR INSTALLATION ON OEM COMPOSITE DOORS	MB	12.08.29
B	ADDED NOTE TO TRIM EXISTING TRIM/CEILING PANELS: ITEMS 11/12 OF SECTIONS 3.0/4.0 (SHT 2/4); UPDATED FIGURE 3 ACCORDINGLY. REF: PAR11-150.	MB	12.01.17
A	NEW ISSUE	DC	11.04.26
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO.	REV. C
CHECKED	A.P.	DSI 9548	SHEET 1 OF 9
MFG. APPR.	N/A	TITLE	SCALE
APPROVED	<i>[Signature]</i>	HINGE DOOR OPENER KIT	NTS
DE APPR.	<i>[Signature]</i>	COPYRIGHT © 2011 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	12.08.29		

3.0 INSTALLATION OF D412-698-041/-042 HINGE PANEL AUTOMATIC DOOR OPENER (OEM ALUMINUM DOOR):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.





1. Remove any ceiling or trim panels located on the RH forward cabin ceiling. Remove existing door spring Bell p/n 205-030-303-101 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the Hinge Panel Door as shown in Figure 4.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the 205-031-423-005/-157/-006/-158 aluminum door from the aircraft per the Aircraft Maintenance Manual.
7. Remove any existing rivets where the D4330-042 Airframe Bracket Assembly, RH and D4330-3 Door Bracket will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\phi 0.129$ ") holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the hinge panel door per Figure 4. Using Figure 5 as a guide for the approximate locations of the mounting holes, transfer drill 3x #30 ($\phi 0.129$ ") holes from the door skin to D4330-3 and drill 2x additional holes at locations shown in Figure 5. Deburr holes.
10. Apply a thin layer of Proseal 890 (or equivalent) to faying surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using CR3213-4 rivets as shown in Figure 4.
11. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
12. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 4.
13. Re-install modified door on aircraft per Aircraft Maintenance Manual.
14. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
15. Verify proper gas spring and door operation.

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AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 12.08.30
CERT. NO.: SH92-43
ISSUE NO.: 5

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DRAWN		HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	N/A	DSI 9548	SHEET 2 OF 9
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4.0 INSTALLATION OF D412-698-043/-044 HINGE PANEL AUTOMATIC DOOR OPENER (OEM COMPOSITE):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.





1. Remove any ceiling or trim panels located on the RH forward cabin ceiling. Remove existing door spring Bell p/n 205-030-303-101 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the hinge panel door as shown in Figure 6.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the 412-030-029-101/-102 composite door from the aircraft per the Aircraft Maintenance Manual.
7. Remove any existing rivets, if any, where the D4330-042 Airframe Bracket Assembly, RH will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\varnothing 0.129$) holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the hinge panel door per Figure 6. Using Figure 7 as a guide for the approximate locations of the mounting holes, drill 3x #7 ($\varnothing 0.201$) holes in D4330-3 and the inner door skin. Enlarge holes in hinge panel door inner skin to 9/16" ($\varnothing 0.5625$).
10. Install the 3x 80-005-2-8 inserts per Paragraph 3.2.12 of the BHT-MED-SRM at the locations drilled in Step 9 in the hinge panel door using Hysol EA934NA.
11. Apply a thin layer of Proseal 890 (or equivalent) to faying surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using hardware as shown in Figure 6.
12. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
13. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 6.
14. Re-install modified door on aircraft per Aircraft Maintenance Manual.
15. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
16. Verify proper gas spring and door operation.

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BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

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ISSUE NO.: 5

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5.0 INSTALLATION OF D412-698-043/-044 HINGE PANEL AUTOMATIC DOOR OPENER (DART SPACEDOORS™):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.

1. Remove any ceiling or trim panels located on the RH forward cabin ceiling. Remove existing door spring Dart p/n D3113-1 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the Spacedoor™ as shown in Figure 6.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the D412-694-03/-04 Door Assembly from the aircraft per ICA-D412-694 Section 52.1.
7. Remove any existing rivets where the D4330-042 Airframe Bracket Assembly, RH will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\phi 0.129"$) holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the Spacedoor™ per Figure 6. Using Figure 7 as a guide for the approximate locations of the mounting holes, drill 3x #7 ($\phi 0.201"$) holes in D4330-3 and the inner door skin. Enlarge holes in Spacedoor™ inner skin to 9/16" ($\phi 0.5625"$).
10. Install the 3x 80-005-2-8 inserts per Paragraph 3.2.12 of the BHT-MED-SRM at the locations drilled in Step 9 in the Spacedoor™ using Hysol EA934NA.
11. Apply a thin layer of Proseal 890 (or equivalent) to faying surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using hardware as shown in Figure 6.
12. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
13. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 6.
14. Re-install modified door on aircraft per ICA-D412-694 Section 52.2.
15. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
16. Verify proper gas spring and door operation.

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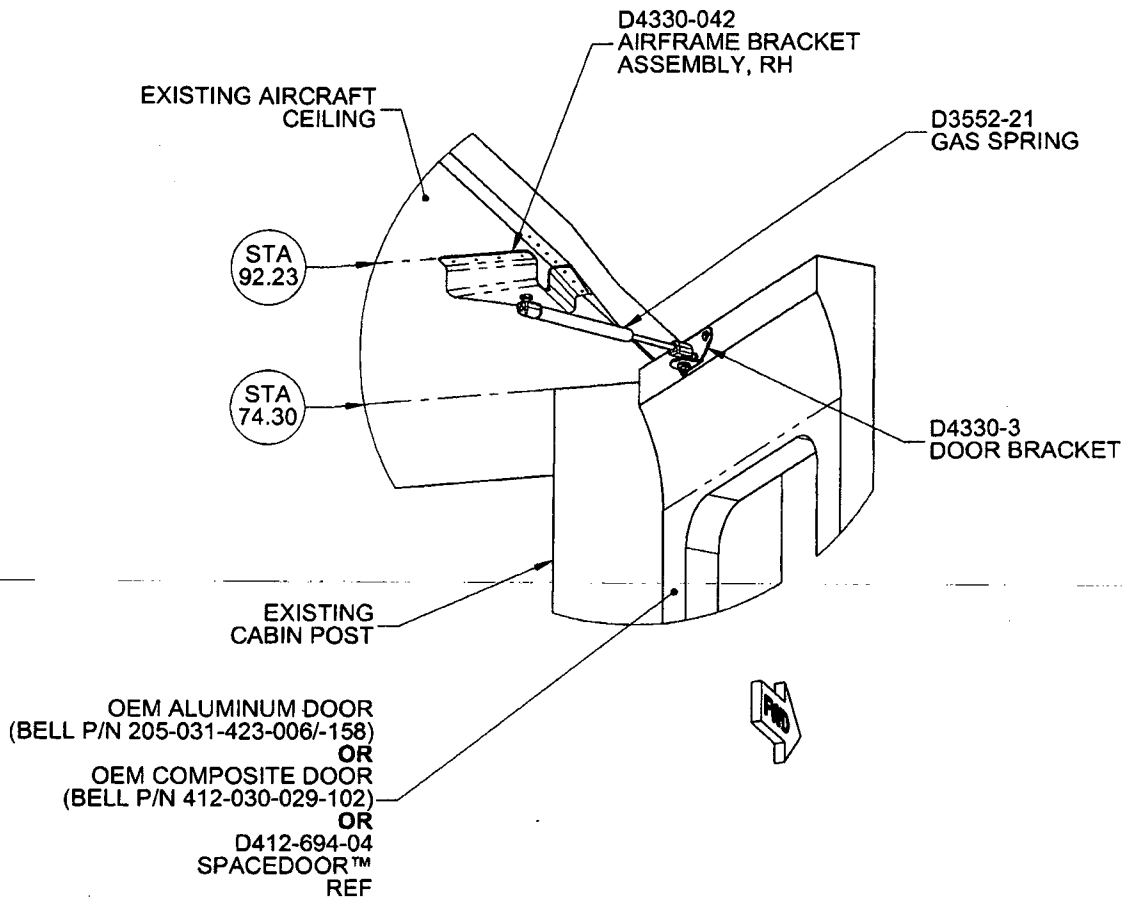


FIGURE 2: INSTALLATION DETAIL
(RH Installation Shown, LH Opposite)

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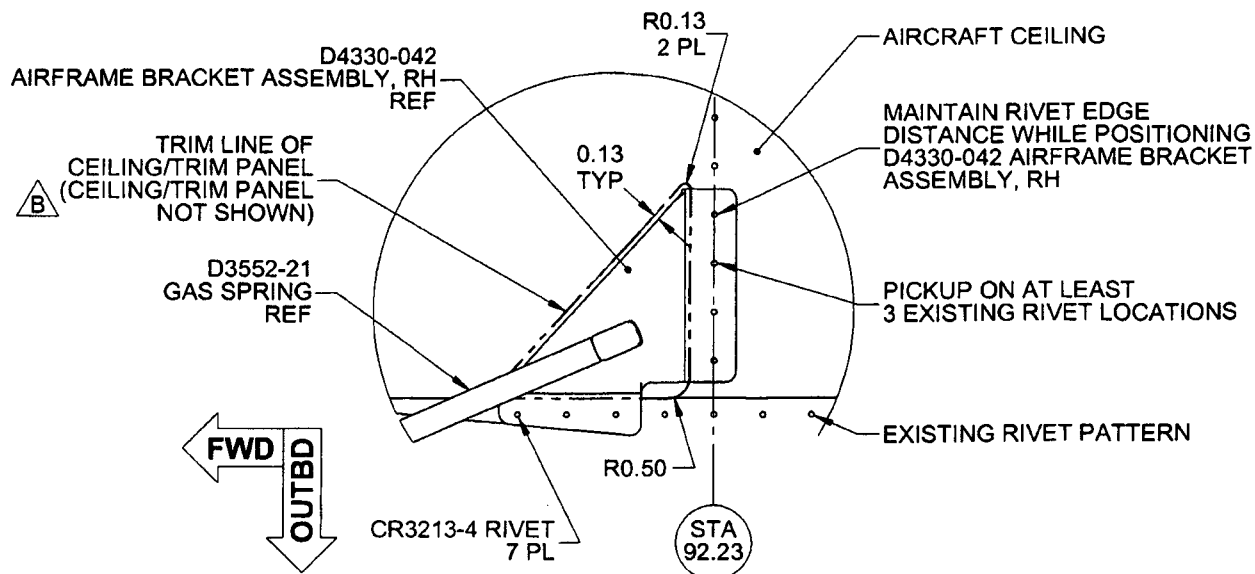


FIGURE 3: LOCATION OF D4330-042 AIRFRAME BRACKET ASSEMBLY
(RH Shown, LH Opposite)

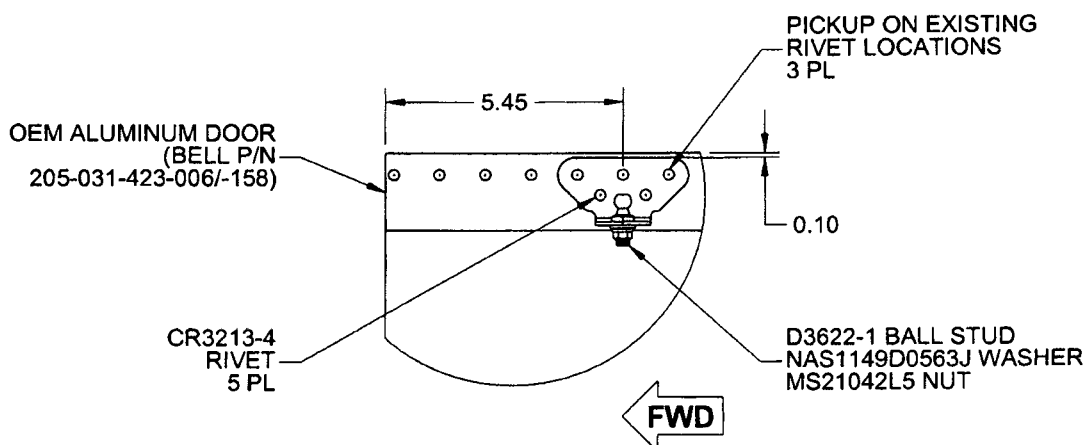






FIGURE 4: LOCATION OF D4330-3 DOOR BRACKET
(OEM ALUMINUM DOOR)
(RH Shown, LH Opposite)

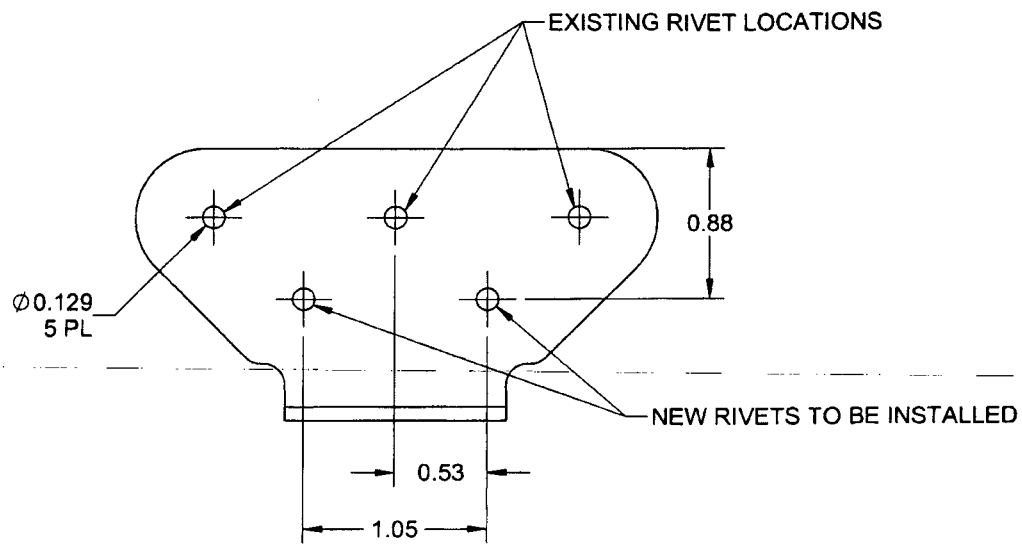
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**FIGURE 5: LOCATION OF D4330-3 DOOR BRACKET MOUNTING HOLES
(OEM ALUMINUM DOOR)**

(NOTE: MAINTAIN MINIMUM EDGE DISTANCE OF 0.25" FROM HOLE CENTER)

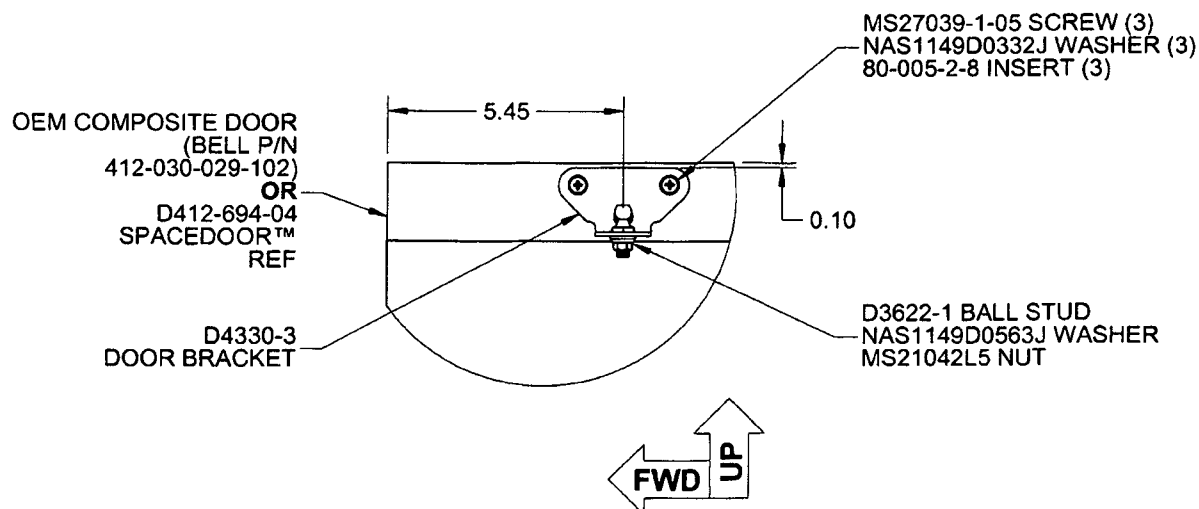
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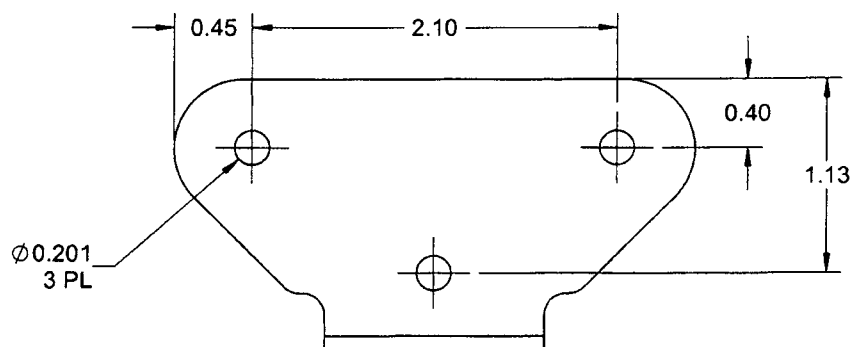
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**FIGURE 6: LOCATION OF D4330-3 DOOR BRACKET
(OEM COMPOSITE DOOR AND DART SPACEDOOR™)**
(RH Shown, LH Opposite)







**FIGURE 7: LOCATION OF D4330-3 DOOR BRACKET MOUNTING HOLES
(OEM COMPOSITE DOOR AND DART SPACEDOOR™)**

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5.0 WEIGHT & BALANCE:

INSTALLATION	WEIGHT	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D412-698-041 LH (Aluminum door)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-042 RH (Aluminum door)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-043 LH (Composite door)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-044 RH (Composite door)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-043 LH (Spacedoor™)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-044 RH (Spacedoor™)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg

6.0 PARTS LIST:

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D412-698-041	HINGE PANEL AUTOMATIC DOOR OPENER KIT, LH (FOR OEM ALUMINUM DOOR)
	X			D412-698-042	HINGE PANEL AUTOMATIC DOOR OPENER KIT, RH (FOR OEM ALUMINUM DOOR)
		X		D412-698-043	HINGE PANEL AUTOMATIC DOOR OPENER KIT, LH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
			X	D412-698-044	HINGE PANEL AUTOMATIC DOOR OPENER KIT, RH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
1	1	1	1	D3552-21	GAS SPRING
1	1	1	1	D3622-1	BALL STUD
1		1		D4330-041	AIRFRAME BRACKET ASSEMBLY, LH
	1		1	D4330-042	AIRFRAME BRACKET ASSEMBLY, RH
1	1	1	1	D4330-3	DOOR BRACKET
		3	3	80-005-2-8	INSERT
1	1	1	1	MS21042L5	NUT
		3	3	MS27039-1-05	SCREW
		3	3	NAS1149D0332J	WASHER
1	1	1	1	NAS1149D0563J	WASHER

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Work Order ID 117164

117164

Page 1

April-24-14 10:00:22 AM

Item ID: D412-698-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Hinge Panel Automatic Door Opener LH Aluminum Door

Start Date: 4/23/14 Start Qty: 2.00 *2*

Cust Item ID:

Required Date: 4/23/14 Req'd Qty: 2.00 *2*

Customer:

Reference:

Approvals: Process Plan: ML5 Date: 14-04-29

Tooling:

Date:

Run Start *NR1*

QC: Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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DSI 9548	C
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Document Control

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DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD412-698-041 CHG001

ML5 14-05-14

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.00

Quality Control

